

CLAIMS:

7/23/03

1-9. (Canceled)

10. (Previously added) A process for providing a privilege for a method of a current thread that is currently executing in a run-time environment in a data processing system, the run-time environment having a stack comprising stack frames with stack frame pointers for associated methods, the process comprising the computer-implemented steps of:

using a thread identifier of the current thread, locating a linked list; and

searching the linked list for an entry having a stack frame pointer that matches the stack frame pointer of the method, wherein an entry of the linked list is a stack frame extension.

11. (Previously added) The process of claim 10, wherein the step of locating a linked list further comprises:

locating the linked list within a stack frame shadow apparatus comprising a plurality of linked lists, each linked list of the plurality of linked lists being associated with a thread.

12. (Previously added) The process of claim 10 wherein a stack frame extension comprises the stack frame pointer of the method, privilege information, and validation information.

13. (Previously added) The process of claim 12 wherein the validation information comprises the name of the method, the signature of the method, or the return address of the method.

14. (Previously added) The process of claim 10 further comprising:

adding an entry to the linked list if no matching entries are found in response to a request to enable a privilege for the method.

15. (Previously added) The process of claim 10 further comprising:
removing a matching entry from the linked list if a matching entry is found in response to a request to revert a privilege for the method.
16. (Previously added) The process of claim 10 further comprising:
retrieving privilege information and validation information for a matching entry from the linked list if a matching entry is found in response to a request to retrieve privileges for the method.
17. (Previously added) A process for enabling and reverting a privilege for a method of a current thread that is currently executing in a run-time environment in a data processing system, the run-time environment having a stack comprising stack frames with stack frame pointers for associated methods, the process comprising the computer-implemented steps of:
storing privilege information in a stack frame shadow apparatus to enable a privilege for a method;
querying a stack frame shadow apparatus for privilege information for a method; and
deleting privilege information in a stack frame shadow apparatus to revert a privilege for a method.
18. (Previously added) A data structure on a computer-readable medium for use in a data processing system, the data structure comprising:
a set of stack frame extensions, wherein a stack frame extension comprises:
a pointer to a stack frame for a method;
a data field for privilege data for the method;
a data field for validation data for the method; and
a linked list of stack frame extension entries, wherein the linked list is identifiable by a thread identifier.

19. (Previously added) A data processing system for providing a privilege for a method of a current thread that is currently executing in a run-time environment in the data processing system, the run-time environment having a stack comprising stack frames with stack frame pointers for associated methods, the data processing system comprising:

locating means for locating a linked list using a thread identifier of the current thread; and

searching means for searching the linked list for an entry having a stack frame pointer that matches the stack frame pointer of the method, wherein an entry of the linked list is a stack frame extension.

20. (Previously added) The data processing system of claim 19 further comprising: a stack frame shadow apparatus comprising a plurality of linked lists, each linked list of the plurality of linked lists being associated with a thread.

21. (Previously added) The data processing system of claim 19 wherein a stack frame extension comprises the stack frame pointer of the method, privilege information, and validation information.

22. (Previously added) The data processing system of claim 21 wherein the validation information comprises the name of the method, the signature of the method, or the return address of the method.

23. (Previously added) The data processing system of claim 19 further comprising: adding means for adding an entry to the linked list if no matching entries are found in response to a request to enable a privilege for the method.

24. (Previously added) The data processing system of claim 19 further comprising: removing means for removing a matching entry from the linked list if a matching entry is found in response to a request to revert a privilege for the method.

25. (Previously added) The data processing system of claim 19 further comprising:
retrieving means for retrieving privilege information and validation information
for a matching entry from the linked list if a matching entry is found in response to a
request to retrieve privileges for the method.

26. (Previously added) A computer program product for use in a data processing
system for providing a privilege for a method of a current thread that is currently
executing in a run-time environment in the data processing system, the run-time
environment having a stack comprising stack frames with stack frame pointers for
associated methods, the computer program product comprising:

first instructions for locating a linked list using a thread identifier of the current
thread; and

second instructions for searching the linked list for an entry having a stack frame
pointer that matches the stack frame pointer of the method, wherein an entry of the linked
list is a stack frame extension.